

**WHAT IS CLAIMED IS:**

1. A temperature controller used in an optical-communication device for conforming a current temperature, comprising:

- 5        a temperature sensor for detecting the current temperature; and,
- a temperature-comparison section for comparing the current temperature detected by the temperature sensor with a predetermined temperature indicative of a proper operating temperature for the device, the temperature-comparison section comprising,
  - a differential amplifier for outputting a difference between signals which
  - 10      are inputted respectively into anode and cathode terminals thereof;
  - a first resistance pad connected to the temperature sensor;
  - a second resistance pad connected to the anode terminal of the differential amplifier and spaced from the first resistance pad;
  - a third resistance pad connected to the cathode terminal of the differential
  - 15      amplifier and spaced from the first and second resistance pads; and,
  - a fourth resistance pad for receiving a signal corresponding to the predetermined temperature and spaced from the first, second, and third resistance pads, wherein the first to fourth resistance pads are short-circuited with one another selectively according to a type of the temperature sensor so as to vary the polarity of the signals
  - 20      inputted into the differential amplifier.

2. The temperature controller according to claim 1, wherein the temperature sensor comprises a PTC sensor, the first and second resistance pads being short-circuited with each other, and the third and fourth resistance pads being short-circuited with each other.

5       3. The temperature controller according to claim 1, wherein the temperature sensor comprises an NTC sensor, the first and third resistance pads being short-circuited with each other, and the second and fourth resistance pads being short-circuited with each other.

10      4. The temperature controller according to claim 1, further comprising at least one resistor having a resistance of  $0\Omega$  which short-circuits the resistance pads with one another.

5       5. A method of maintaining the temperature of an optical-communication device, comprising:

detecting a current temperature of the device;  
15      comparing the current temperature to a predetermined temperature;  
generating a signal which represents a difference between the current temperature and the predetermined temperature; and,

20      providing a plurality of resistance pads that are selectively short-circuited with one another according to a type of the temperature sensor so as to vary the polarity of the signals inputted into the differential amplifier.